REMARKS

Applicant requests reconsideration of the application in view of the amendments and arguments addressing the new grounds of rejection.

Summary of Office Action

Claims 1-20 are pending.

Claims 1, 4, 13, and 15 were rejected as being anticipated under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 6,219,417 of Zhou ("Zhou").

Claims 3 and 14 were rejected under 35 U.S.C. § 103 as being unpatentable over Zhou.

Claims 5 and 16 were rejected under 35 U.S.C. § 103 as being unpatentable over Zhou in view of U.S. Patent No. 5,528,682 of Cotreay ("Cotreay").

Claims 7, 10, 11 and 18 were rejected under 35 U.S.C. § 103 as being unpatentable over Zhou in view of U.S. Patent No. 5,274,702 of Rosch, et al. ("Rosch").

Claims 2, 6, 8, 9, 12, 17, 19, and 20 were indicated as being allowable if re-written.

Summary of Amendments

Claims 1, 4, 10, and 13 were amended. Claim 10 was amended to correct antecedent basis. Support for the amendments to claims 1, 4, and 13 may be found at p. 7, lines 11-13, and p. 8, line 28 thru p. 9, line 3, lines 9-12 of the specification and Figure 3 of the application as originally filed. Applicant submits that the amendments to the claims do not add new matter.

Response to 35 U.S.C. § 102 rejections

Claims 1, 4, 13, and 15 were rejected under 35 U.S.C. § 102 as being anticipated by Zhou.

As indicated above, claims 1, 4, and 13 have been amended. Applicant respectfully submits that claims 1, 4, and 13 as amended are not anticipated by Zhou. In particular, applicant submits that *Zhou does not disclose an integrated circuit having at least one node for receiving a sensed tip signal and at least one node for receiving a sensed ring signal of a subscriber loop, wherein the integrated circuit generates an analog control signal for a subscriber loop linefeed driver in response to the sensed tip and ring signals.*

Applicant submits that Zhou's DSP does not have *sense inputs* for the tip or the ring signal. Subscriber loop parameter information is converted into digital form by the quad converter and provided to the DSP in a serial data stream. Among other issues, there is only a single bit DSP input associated with receiving data for any subscriber loop using a serial data stream from the converter. Thus applicant respectfully submits that Zhou does not have both at least one node for receiving the sensed tip signal and at least one node for receiving the sensed ring signal.

Rather than belaboring whether such a single bit digital input is analogous to "sense inputs" or nodes applicant notes that Zhou's DSP only communicates digitally. Indeed, converter (314) is required for converting analog signals from the XASLIC to digital data for the DSP. Likewise digital data from the DSP is converted back into analog signal form by the converter where necessary for the XASLIC. Any control signals generated by Zhou's DSP for the XASLICs are clearly *digital* in nature (Zhou, col. 7, lines 14-47; Figs. 3, 5A)

Accordingly, *Zhou does not disclose an integrated circuit having at least one node for receiving a sensed tip signal and at least one node for receiving a sensed ring signal of a subscriber loop, wherein the integrated circuit generates an analog control signal for a subscriber loop linefeed driver in response to the sensed signals.*

In contrast, claim 1 includes the language:

1. An integrated circuit package comprising:
an integrated circuit having sense inputs for a sensed tip signal and a sensed ring signal of a subscriber loop, wherein the integrated circuit generates an analog control signal for a subscriber loop linefeed driver in response to the

sensed signals, wherein the linefeed driver does not reside within a same integrated circuit.

(Claim 1, as amended)(*emphasis added*)

Similar arguments may be made with respect to claims 4 and 13. In addition, applicant submits Zhou does not teach or suggest *providing the sensed tip and ring signals to first and second node sets, respectively, wherein each of the first and second node sets includes at least one node distinct from the other set.*

To the contrary, Zhou's DSP only has a single bit input associated with receiving data for any subscriber loop using a serial data stream from the converter 314. At best this suggests a single node shared for all the relevant sensed data. Applicant thus submits that *Zhou does not teach or suggest providing a sensed tip signal to a first node set of an integrated circuit and a sensed ring signal to a second node set of the integrated circuit, wherein each of the first and second node sets includes at least one node distinct from the other set.*

Therefore, applicant thus submits that Zhou does not teach or suggest either 1) *providing a sensed tip signal to a first node set of an integrated circuit and a sensed ring signal to a second node set of the integrated circuit, wherein each of the first and second node sets includes at least one node distinct from the other set,* or 2) that the *integrated circuit generates analog control signals for driving the subscriber loop or controlling the battery feed in response to the sensed tip and ring signals.*

In contrast, claims 4 and 13 include the language:

4. A subscriber loop linefeed driver comprising:
sense circuitry providing a sensed tip signal to a first node set of an integrated circuit and a sensed ring signal to a second node set of an integrated circuit, wherein the sensed tip signal corresponds to a tip current of the subscriber loop, wherein the sensed ring signal corresponds to a ring current of the subscriber loop, *wherein each of the first and second node sets includes at least one node distinct from the other set;* and
power circuitry for *providing battery feed to a ring node and a tip node of the subscriber loop in accordance with an analog control signal generated by the integrated circuit in response to the sensed tip and ring signals.*

(Claim 4, as amended)(*emphasis added*)

13. An apparatus comprising:

an integrated circuit generating analog subscriber loop control signals in response to a sensed tip signal and a sensed ring signal of the subscriber loop, the sensed tip and sensed ring signals received at first and second node sets, respectively, of the integrated circuit, *wherein each of the first and second node sets includes at least one node distinct from the other set;* and

a linefeed driver for driving a subscriber loop in accordance with the subscriber loop control signals, the linefeed driver providing the sensed tip and ring signals.

(Claim 13, as amended)(*emphasis added*)

Applicant thus submits claims 1, 4, and 13 as amended are not anticipated by Zhou. Given that claims 2-3 depend from claim 1, claims 5-12 depend from claim 4, and claims 14-20 depend from claim 13, applicant submits claims 2-3, 5-12, and 14-23 are likewise not anticipated by Zhou.

Applicant respectfully submits that the 35 U.S.C. § 102 rejections have been overcome.

Response to 35 U.S.C. § 103 rejections of claims 3 and 14

Claims 3 and 14 were rejected as being unpatentable over Zhou in conjunction with the Examiner's "Official Notice". In particular, the Examiner stated:

> The Examiner takes Official Notice of the fact that CMOS technology was well known at the time of the invention and was readily applied to both digital and analog circuits to provide low power and reliable integrated circuits. It would have been obvious to one of ordinary skill in the art to fabricate the integrated circuits of figures 5A and 5B using CMOS technology as was known in the art for the purpose of implementing a low power and reliable telephone line card.

(06/15/2005 Office Action, p. 4)

Applicant respectfully traverses the Examiner's "Official Notice". Although Zhou's Figures 5A and 5B illustrate functional blocks, there is no explicit support for the proposition that any of the components other than the DSP might be an integrated circuit. Although the Examiner has elsewhere stated that the blocks are clearly discrete integrated circuits (06/15/2005 Office Action,

pg 2), applicant was unable to find support in Zhou for the Examiner's proposition.

Nonetheless, even if we assume *arguendo* that the functional blocks (i.e., XASLIC, quad converter, and DSP are discrete integrated circuits, the Examiner should recognize that interfacing with a subscriber line requires voltages in excess of traditional CMOS integrated circuit limitations. In particular, reduction of linefeed driver and sensing components of prior art SLICs to integrated circuitry required a high voltage fabrication technology (e.g., high voltage bipolar). (*see also*, Specification, p. 5, lines 16-21; p. 9, line 28 through pg. 10, lines 1-13).

The Examiner may also want to review the data sheets of prior art SLIC products previously cited by the applicant for further support (*see, e.g.*, ADVANCED MICRO DEVICES, "Am79213/Am79C203/031: Advanced Subscriber Line Interface Circuit (ASLIC™) Device/Advanced Subscriber Line Audio-Processing Circuit (ASLAC™) Device Preliminary Datasheet," Publication #19770, Rev. B, September 1998. *AMD uses two integrated circuits (ASLIC and ASLAC) to implement the subscriber line interface. The first paragraph of page 13 clearly identifies the ASLIC as a high voltage bipolar device and the ASLAC as a low voltage CMOS device*) (*see, also*, pg. 9 of ADVANCED MICRO DEVICES, "Am79R241: Intelligent Subscriber Line Interface Circuit (ISLIC™) Advance Information Datasheet," Publication #22420, Rev. A, September 1998 *which supports the same proposition for another SLIC product line.*)

In summary, applicant respectfully traverses the Examiner's Official Notice in view of the a) functional requirements of the prior art SLICs; b) lack of any intrinsic or extrinsic evidence for the Examiner's position; and c) extrinsic evidence from references already cited by applicant which support applicant's position.

Applicant submits that claim 3 depends from claim 1 and claim 14 depends from claim 13. If independent claims 1 and 13 are nonobvious in view of the

cited references, then claims 3 and 14 are likewise nonobvious in view of the cited references.

Applicant respectfully submits that the rejections of claims 3 and 14 under 35 U.S.C. § 103 have been overcome.

Response to 35 U.S.C. § 103 rejections of claims 5, 7, 10, 11, 16 and 18

Claims 5 and 16 were rejected as being unpatentable over Zhou in view of Cotreay. Claims 7, 10, 11, and 18 were rejected as being unpatentable over Zhou in view of Rosch.

Cotreay appears to have been cited solely for the proposition of teaching sensing either side of an in-line resistor to enable computation of a line current.

Rosch appears to have been cited for teaching tip and ring control circuits and voiceband circuitry.

Applicant respectfully submits that none of Cotreay or Rosch makes up for the deficiencies of Zhou presented above with respect to the response to the 35 U.S.C. § 102 rejections.

Thus applicant submits independent claims 4 and 13 are nonobvious in view of the cited references, alone or in combination. Given that claims 5, 7, 10, and 11 depend from claim 4; and claims 16 and 18 depend from claim 13; applicant submits claims 5, 7, 10, 11, 16, and 18 are likewise patentable under 35 U.S.C. § 103 in view of the cited references.

Applicant respectfully submits that the 35 U.S.C. § 103 rejections of claims 5, 7, 10, 11, 16, and 18 have been overcome.

Conclusion

In view of the amendments and arguments presented above, applicant respectfully submits the applicable rejections and objections have been overcome. Accordingly, claims 1-20, as amended, should be found to be in condition for allowance.

If there are any issues that can be resolved by telephone conference, the Examiner is respectfully requested to contact the undersigned at **(512) 858-9910**.

Respectfully submitted,

Date November 15, 2005 William D. Davis

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